PROCEEDINGS OF THE
ROYAL ENTOMOLOGICAL SOCIETY
OF LONDON

SERIES C. JOURNAL OF MEETINGS

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ORDINARY MEETING

WEDNESDAY, 2ND NOVEMBER, 1949, at 5.30 p.m.

AGENDA

1. Confirmation of the Proceedings of the Ordinary Meeting held on 5th October 1949.
2. Recommendations of candidates for Fellowship.
3. Announcement of election of new Fellows.
4. Additions to the Library.

Presented.

Gregg, A. L. *The Philosophy and Practice of Bee-keeping.* 8vo. Petts Wood. 1949. [The Publishers.]

Hayward, K. J. *Genera et species animalium Argentinorum.* Tomus I. Lepidoptera (Rhopalocera). Fol. Buenos Aires. 1948. [Instituto Miguel Lillo, Tucuman, Argentina. By exchange.]

Mann, William M. *Ant Hill Odyssey.* 8vo. Boston, U.S.A. 1948. [The Publishers.]

Needham, Joseph, and Baldwin, Ernest, editors. *Hopkins and Biochemistry. 1861–1947.* 8vo. Cambridge. 1949. [The Publishers.]

Saunders, E. *Synopsis of British Hemiptera-Heteroptera.* 8vo. London. 1876. [Mr. H. A. Saunders.] [The author's copy with his notes and additions.]

Scheerpeltz, Otto, and Höfner, Karl. *Käfer und Pilze.* 8vo. Wien. 1948. [The Publishers.]

Purchased.

Bonet, Rodolphe. *Délassements entomologiques.* 2me série. 8vo. Paris. 1921.

Bouvier, E.-L. *Habitudes et métamorphoses des insectes.* 8vo. Paris. 1921.

Eckstein, K. *Die Schmetterlinge.* [Das Naturreich.] 4to. Wiesbaden. 1922.

Girard, Maurice. *Les métamorphoses des insectes.* 8vo. Paris. 1866.

Hartweig, Fritz. *Die Schmetterlings-Fauna des Landes Braunschweig.* 8vo. Frankfurt a. M. 1930.

Höfner, Gabriel. *Die Tagfalter.* Sm. 8vo. Wolfsberg. 1879.

Knortz, Karl. *Die Insekten in Sage, Sitte und Literatur.* 8vo. Annaberg. 1910.

Krancher, Dr. *Erlebtes und Erprobtes.* 8vo. Stuttgart. 1922.

Küster, Ernst. *Die Gallen der Pflanzen.* 8vo. Leipzig. 1911.

Lutz, K. G. *Das Buch der Schmetterlinge.* 4to. Stuttgart. [*c.* 1890.]

Michael, Otto. *Erinnerungen aus Süd-Amerika.* 8vo. Frankfurt a. M. 1922.
Michael, Otto. *Der Schmetterlingsjäger von Amazonenstrom.* 8vo. Dresden. 1923.
Punnett, R. C. *Mendelism.* 8vo. New York. 1909.
Van Deurs, Wilhelm. *Sommerfugle* VI. Pyralider. 8vo. København. 1942. [Danmarks Fauna Bd. 48.]
Van Deurs, Wilhelm. *Sommerfugle* VII. Fjermøl. 8vo. København. 1948. [Danmarks Fauna Bd. 52.]
Jüterbock, Georg. *Atlas der Schmetterlinge.* 12mo. Berlin. n.d.
Jüterbock, Georg. *Atlas der Käfer.* 12mo. Berlin. n.d.

In addition separates have been presented by Laboratorio di Entomologia Agraria, Portici, Mr. B. J. Lempke, Lt.-Col. F. C. Fraser, United States Department of Agriculture, Smithsonian Institution, Dr. A. J. Nicholson, Mr. H. E. Box, Mr. F. J. Manning, Herr Josef Klimesch and Dr. W. H. Thorpe.

5. Admission of Fellows.

6. Exhibits.

Fellows are particularly requested to bring suitable exhibits to the Meeting even though it may not be possible to announce their intention to do so beforehand.

> *Note.*—To avoid congestion in the Library and to enable exhibits to be displayed to greater advantage, a table has been placed in the meeting room for this purpose. Fellows are asked to place their exhibits on this table, with a suitable explanatory note, as soon as possible on the afternoon of the meeting, so that they are available for inspection there before the meeting opens.

7. Nomination of Officers and Council for 1950.

8. Communications.

1. Dr. N. Waloff.

Biology of the British Short-horned Grasshoppers.

[Abstract]

The few species of the British grasshoppers are relatively abundant, yet surprisingly little is known of their biology. The paucity of the species of British Orthoptera suggests that they are living on the fringe of their geographical distribution. Population studies on small colonies of grasshoppers at the Imperial College Field Station, Silwood Park, are concerned with the factors limiting their abundance. These studies include identifications of the nymphal stages and egg pods, work on the ovarial cycles of the females, choice of oviposition sites and numerical estimations of the egg pods, nymphs and adults.

2. Mr. N. C. E. Miller.

Stridulation in REDUVIIDAE.

[Abstract]

The phenomenon of stridulation in REDUVIIDAE was discovered about two hundred years ago, but not until two hundred years later was the mechanism described in detail. The faculty is possessed by some REDUVIIDAE in the larval stages also, and in certain species there are some modifications in the structure of the apparatus. In some species the apparatus is lacking. The significance of stridulation is unexplained.

3. **Dr. V. B. Wigglesworth, F.R.S.**

Fuel consumption in the flying insect.

[Abstract]

The duration of uninterrupted flight in an insect depends on the quantity of fuel it can carry. Some experiments on *Drosophila* will be described which show that carbohydrate (glycogen) alone is utilized for flight. Exhaustion occurs when the store of glycogen is so reduced that it cannot be transported to the muscles fast enough to meet their needs.

NOTICES.

Owing to the redecoration of the Society's rooms it will shortly be necessary to close the Library temporarily and without further notice. This may make it necessary at the November meeting to serve tea in the Council Room on the ground floor.

The meeting on 7th December will be devoted to small exhibits of special interest requiring only a short explanation. Fellows wishing to make such exhibits are asked to forward brief summaries to the Secretary not later than Saturday, 3rd December.

A card index of Fellows' addresses arranged **on a geographical basis** is now available for the use of Fellows in the Society's Rooms. Addresses in Great Britain are grouped under counties: elsewhere under Dominions, Colonies, Foreign States, etc.

ADMISSION OF FELLOWS

Any Fellow who has not been formally admitted to the Society under Chapter XIV, Section 4 of the Bye-laws and attends the meeting on 2nd November, 1949, is requested to inform the Secretary before 5.15 p.m. on that date.

Proceedings of the Ordinary Meeting held on 5th October, 1949.

Dr. V. B. Wigglesworth, F.R.S., President, in the Chair.

Present, 72 Fellows and 13 Visitors.

The minutes of the Ordinary Meeting held on 7th September, 1949, were confirmed and signed by the President.

The President extended a welcome to Dr. Skat Hoffmeyer and Dr. L. R. Natvig, distinguished Fellows of the Society, now on a visit to this country, and to Mr. Chen Seh-Pong, a visitor.

The names of the following candidates for election were read for the first time: K. Ander, Phil.Dr., W. B. Broughton, B.Sc., C. Garrett-Jones, B.Sc., M.Sc., Dr. J. W. O. Holmes, P. Israel, M.A., F. J. Manning, B.A., H. D. Morgan, K. G. Smith, B.Sc., K. Spencer, B.A.

For the second time: L. C. Adkins, R. F. Benson, D. S. Bertram, R. A. L. Dibb, A. A. Granovsky, J. L. Gregory, B.Sc., Dipl.Agr.Sci., Commander L. H. T. Hollebone, R.N., W. E. Stanley Merrett, O.B.E., B.A., B.M., B.Ch., Marion R. Smith, A. Taylor, I. E. Whitehead and Prof. Merle W. Wing, B.S.

The Secretary read the names of the following newly elected Fellows of the Society: Dr. F. M. J. Carpentier, Sc.Dr., Chargé de cours à l'Université de Liège, rue Edouard Wacken, 23, Liège, Belgium; E. J. Ebeyer Slythe, Ministry of Agriculture, Valetta, Malta; Dr. R. Levi-Castillo, B.Sc., M.P.H., M.D., Ph.D., P.O. Box 3606, Guayaquil, Ecuador; Dr. I. Thomas, M.Sc., Ph.D., Ministry of Agriculture and Fisheries, Plant Pathology Laboratory, Harpenden, Herts.

Thanks were voted to donors of gifts to the Library since the last meeting.

Mr. S. N. A. Jacobs, Mr. F. C. Hatwell, Mr. G. H. Caswell, Mr. R. M. Dobson, Mr. W. A. Page, Dr. L. R. Natvig, Mrs. J. Kenten, Mr. E. C. Pelham-Clinton and Mr. A. Fraser signed the Obligation Book and were admitted Fellows of the Society.

Mr. J. W. A. F. Balfour-Browne exhibited an unidentified species of *Thorictus* which had recently been sent to the Natural History Museum and reported as "feeding on Stored Ground-nuts in Nigeria." The specimens exhibited were part of a consignment of living specimens which had been received for experimental purposes, and observation had shown that the insects did, in fact, attack the ground-nuts and cause appreciable damage. He said that the larvae of this family were quite unknown. Previous biological reports on species of this family had always associated the beetles with ants, chiefly of the genus *Myrmecocystus*, on which they had been found attached to the scape of the antenna (*see* Ganglbauer, 1899, *Käfer von Mitteleuropas* **3** : 763, fig. 40), and it had been suggested that as an adaptation for this the inner edge of the mandibles was emarginated and the clypeus semicircularly excised. There was also a brush of small reddish golden hairs at the base of the prothorax, just beneath the posterior angles, which were reputedly myrmecophilous hairs. On the basis of these features the family THORICTIDAE had been reputed to be myrmecophilous and had been presumed to play the same role in an ant's nest as the myrmecophilous HISTERIDAE. The fact that the present species was certainly feeding on the ground-nuts suggested the possibility that the association with ants might be of use to the insect, which was entirely flightless and had the elytra very firmly soldered together along the suture, as a means of dispersal, and that it was not primarily designed to enable the insect to be carried into an ant's nest. The fact that the beetle was the active, not the passive, partner in the known association might be the governing factor.

Mr. P. F. Mattingly made a communication, accompanied by an exhibit, on the hybridization of *Aedes* (*Stegomyia*) *albopictus* Skuse and *Aedes* (*Stegomyia*) *aegypti* L. (Diptera; CULICIDAE). He said that in 1937 Toumanoff, working in French Indo-China, crossed these quite dissimilar species. From *albopictus* ♀ × *aegypti* ♂ fertile offspring of both sexes were obtained and these were interbred to give five further generations of offspring. All these offspring exactly resembled the female parent, i.e. they were typical *albopictus* and possessed no characters in any way suggestive of *aegypti*. The cross *aegypti* ♀ × *albopictus* ♂ proved more difficult to make but after some difficulty two generations of offspring were obtained. These again resembled the female parent exactly, i.e. they were typical *aegypti*. In 1939 Hoang-Tich-Try successfully repeated the *albopictus* ♀ × *aegypti* ♂ cross and recently Downs and Baker in Mexico have successfully obtained the *aegypti* ♀ × *albopictus* ♂ cross and confirmed Toumanoff's results. The simplest explanation of this phenomenon would appear to be a mechanical fertilization of the ovum in which the male nucleus played no part. The offspring would then be parthenogenetic and haploid. It was, however, difficult to picture any cytological mechanism of a kind familiar among the Diptera whereby offspring of both sexes could be produced. Recent work still in progress rendered an explanation based on parthenogenesis still more difficult to accept.

Dr. Cockayne mentioned that similar phenomena occurred in the Lepidoptera, and added that no satisfactory explanation of them, in his opinion, had yet been suggested.

Mr. R. B. Benson said that in sawflies (Hymenoptera Symphyta) where males were normally haploid and females diploid, a few species were known to produce mixed male and female offspring parthenogenetically.*

Miss Vere Temple exhibited a selection of drawings she was preparing to illustrate the flowers and insects of Dorset.

Mr. J. W. S. Pringle, a visitor, read a paper, illustrated by a practical demonstration and an exhibit, on the function of the halteres of Diptera, an abstract of which appeared on page 30.

In the discussion which followed Mr. Pringle said, in reply to an enquiry by Dr. Williams, that the halteres provided a compensatory factor in the flight mechanism of a fly which came into operation when it was turned sideways and enabled it to return to correct flight, which it could not do automatically from that position.

Dr. Skat Hoffmeyer, of Aarhus, Denmark, read a paper on *Problems in Danish Macrolepidoptera*, as announced on page 30. He said that all Danish species of Macrolepidoptera had immigrated since the Ice Age, the great majority being of Eastern origin. On reaching the Baltic the species had travelled partly north of the Baltic through Finland and Sweden to the Danish Isles, and partly south of the Baltic through Northern Germany to Jutland. In some cases these movements were not finished. Far fewer species were of south-eastern or south-western origin. Some relicts from the post-glacial period still remained—boreo-alpine species, one (*Cidaria pupillata*) being probably interglacial. Other relicts were *Thermophile*, from the Stone Age. The boreo-alpine species seemed to have had a favourable period during recent decades. At the same time a series of species had invaded the country from the south. Dr. Hoffmeyer dealt further with some species, races and ecological forms of particular interest, including *Euxoa lydia*, forms of *Hydraecia crinanensis, Hadena sordida, Oligia literosa* and *Ammoconia caecimacula*.

The President, Dr. Williams and Mr. Kerrich took part in the subsequent discussion.

N. D. RILEY, *Honorary Secretary.*

The next meeting will be held on 7th December, at 5.30 p.m.

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* Mr. Benson subsequently supplied the following references : *Pseudoclavellaria amerinae* (L.) (Peacock, 1938, *Tijdschr. Ent.* Amsterdam, **81** : 1–13) ; *Priophorus tener* (Zaddach) (Comrie, 1938, *Nature,* **142** : 877) ; *Nematus* (*Pteronidea*) *polyspila* (Forster) (Enslin, 1912, *Die Tenthredinoidea Mitteleuropas:* 29) ; and *Nematus* (*Pikonema*) *alaskensis* (Rohwer) (Gobeil, 1939, *Bull. Serv. Ent. Minist. Terres Quebec,* **3** : 1–48).

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NOTICES

In addition to the *Transactions* and *Proceedings* (Series A, B, and C), the following publications are available on application at the Society's rooms :—

The Generic Names of British Insects, prepared by the Committee on Generic Nomenclature of the Royal Entomological Society of London, with the assistance of the Department of Entomology of the British Museum (Natural History) :

Part 1.	Recommendations relating to the publication of the committee's reports	price 6*d*.
Part 2.	The generic names of the British Rhopalocera with a check list of the species	price 3*s*. 6*d*.
Part 3.	The generic names of the British Odonata with a check list of the species	price 3*s*. 6*d*.
Part 4.	The generic names of the British Neuroptera, with a check list of the British species	price 3*s*. 6*d*.
Part 5.	The generic names of the British Hymenoptera Aculeata, with a check list of the British species	price 15*s*. 0*d*.
Part 6.	The generic names of the British Carabidae, with a check list of the British species	price 10*s*. 0*d*.
Part 7.	The generic names of the British Hydradephaga, with a check list of the British species	price 5*s*. 0*d*.
Part 8.	The generic names of the British Hemiptera-Heteroptera, with a check list of the British species	price 39*s*. 0*d*.
Part 9.	The generic names of the British Staphylinidae, with a check list of the species	price 40*s*. 0*d*.

Stylops, a Journal of Taxonomic Entomology.
1932–1935. Vols. 1–4 (all issued). Price £1 16*s*. 0*d*. each ; to Fellows, £1 7*s*. 0*d*.

Abstract of Proceedings of the Royal Entomological Society of London. 1935. Nos. 1–6 (all issued). 3*s*. 0*d*.

Hubner : a bibliographical and systematic account of the entomological works of Jacob Hubner and the Supplements thereto. In 2 vols. By Francis Hemming.

Price Vol. 1. 605 pp. £1 15*s*. 0*d*.
,, Vol. 2. 275 pp. 15*s*. 0*d*.

Published by The Royal Entomological Society of London *and sold at its rooms*, 41, *Queen's Gate, S.W.* 7, *price* 6*d*.

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